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**ABSTRACT OF THE DISCLOSURE**

**USE OF TRELLIS CODED MODULATION TO MITIGATE  
FADING CHANNELS IN DATA TRANSMISSION OVER  
AIR LINK WIRELESS CHANNELS OF GPRS/EDGE SYSTEMS**

5 Disclosed is a system and method for improving efficiency and overall capacity of data transmission within a given bandwidth in a GPRS/EDGE wireless air-link channel. A GPRS data terminal, mobile unit and/or other end-user equipment is equipped with a (specially  
10 designed) Trellis coder that replaces the traditional cyclic coders and allows encoding and decoding of data via the Trellis code algorithm. Trellis coder eliminates errors in data transmission, increases capacity in a given bandwidth, and corrects problems with fading  
15 channels associated with wireless transmission. The Trellis coder is also utilized for voice transmission and may be fabricated on an integrated circuit for utilization within hand-held devices.

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